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(54) GLASS AND GLASS CERAMIC EACH WITH HIGH SPECIFIC MODULUS AND THEIR USE

(57) Abstract:

PROBLEM TO BE SOLVED: To obtain a glass or glass ceramic material having high specific modulus and relatively high thermal expansion coefficient, easily meltable, and also having sufficient fracture toughness and good surface characteristics.

SOLUTION: This glass or glass ceramic comprises, on an oxide basis, 25-50 mass% of SiO₂, >5 to 16 mass% of B₂O₃, 10-17 mass% of Al₂O₃, 0-8 mass% of P₂O₅, 5-15 mass% of Li₂O, 0-10 mass% of Na₂O, 0-10 mass% of K₂O, 10-30 mass% of MgO, 0-10 mass% of CaO, 0-8 mass% of SrO, 0-8 mass% of ZnO, 0.1-10 mass% of TiO₂ and 0-8 mass% of ZrO₂, and containing, as necessary, commonly used amounts of at least

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one clarifier; wherein the total amount of the bivalent metal oxides (RO) accounts for ≤ 45 mass% of the glass or glass ceramic and the total amount of the alkali metal oxides (R₂O) accounts for ≤ 30 mass% of the glass or glass ceramic. This glass or glass ceramic material is esp. suitable for making hard disk substrates.

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